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CANCER MORTALITY HAS INCREASED AT OLDER AGES

The Metropolitan Life Insurance Company has completed a monograph relating to the mortality from cancer among its millions of Industrial policyholders. This survey covers the twelve-year period 1911 to 1922. In advance of the publication of this monograph, some of the more important findings are now announced as follows:

1. Cancer was the fifth cause of death in numerical importance, being outranked only by heart disease, tuberculosis, Bright's disease and pneumonia.

2. During the two latest years of the period its relative rank as a cause of death was higher than in the prior years. In 1921, only heart disease and tuberculosis had higher deathrates.

3. The mortality from cancer has increased in the industrial population of the United States and Canada during the twelve years studied. In making this statement, due allowance has been made, moreover, for improved diagnosis and for more accurate reporting and certification of causes of death—factors which would in themselves tend to raise the apparent deathrate. The actual increase in the cancer deathrate has been small—much smaller than might be inferred from analysis of published crude deathrates. It has been greater among males than among females; in fact, there has been a slightly downward trend in the mortality among colored females.

4. The deathrate has not been increasing uniformly at the several age divisions in life. A slightly declining tendency is in evidence between 35 and 55 years and a slightly upward trend beyond 55 years. The more advanced the age, the greater has been the rate of increase. It is thus evident that the gravity of the cancer situation is concentrated on the older ages of life, not only from the standpoint

of maximum incidence, but from that of increasing mortality. The slight fall between 35 and 55 years of age may mean that there has been some response to the campaign of education for cancer prevention in this age range, where persons are more amenable to instruction, come more often under medical supervision in the course of treatment for minor, acute illnesses, submit to more periodical health examinations, and apply, to a greater extent than those of more advanced age, the hygienic lessons taught through the public press and by health organizations. Possibly, also, this may be the result of prolonging the life of increasing numbers of cancer cases through the medium of early surgical operation.

5. Although seldom regarded as an important disease in childhood and adolescence, a considerable number of deaths from cancer occur before age 25. More than 2 percent of all the cancer deaths of these Industrial policyholders were of persons under 25 years. The type of malignant growth known as sarcoma is responsible for most of the deaths of young children reported as due to cancer.

6. Deaths from cancers of the stomach and liver, the female genitals, and of the peritoneum, intestines and rectum, together constitute over two-thirds of the mortality from cancer. For cancers of the stomach and liver, there is little difference in the deathrate of males and females. For cancers of the peritoneum, intestines and rectum, the deathrates among women are much higher than among men. The relatively high rate from these cancers, together with those of the female genital organs and of the breast, are the factors which make the female deathrate for cancers as a whole higher than that for males. Buccal cavity and skin cancers, especially the former, run much higher among men.

7. This relatively high mortality among females from cancers of the peritoneum, intestines and rectum conforms to what has been observed for certain other abdominal diseases. Intestinal tuberculosis and tuberculous peritonitis, contrary to other forms of tuberculous disease, also register higher mortality among women than men. We know of no satisfactory explanation for this. The deathrate of females is also higher than for males for a more heterogeneous group of intestinal conditions including intestinal adhesions, "chronic constipation," fecal fistula, intestinal gangrene, intestinal hemorrhage, intestinal paralysis, etc. This, again, suggests a relationship between the diseases of the female sex organs and those of the intestinal tract.

8. The deathrate for cancer of the stomach and liver has shown only a slight rising tendency and the increase has applied to males

only. The deathrate has declined considerably among both white and colored females.

9. Cancers of the pharynx and of the esophagus are rare among females.

10. Next to cancer of the stomach and liver, cancer of the female genitals is the most important seat of malignant disease. Among colored women, the deathrate for female genital growths is even higher than for the stomach and liver. There was practically a stationary deathrate. More than eleven-twelfths of this type of malignant growth are seated in the uterus among white women and about 97 percent. among colored women. The deathrate among colored women from uterine cancers is excessively high. Growths in the ovary and fallopian tubes record higher deathrates among white women than among colored.

11. The upward trend of the deathrate for cancers of the intestinal tract has been more pronounced than for any other group of malignant growths. The increase has been particularly striking among both colored males and females. The upward trend was most pronounced after age 55.

12. More than 60 per cent. of the mortality from this group of cancers resulted from growths in the small intestine or in some part of the large intestine other than the rectum or anus. About 31 per cent. of the deaths were due to rectal and anal growths while 6.5 per cent. were from cancers in the mesentery or peritoneum.

13. Rectal and anal cancers exact a particularly heavy toll of life among negro women, in fact, they constitute the only instance in the entire group of malignant growths of the peritoneum, intestines and rectum in which the mortality among colored persons exceeds that of the whites. Further research is obviously indicated to determine the cause for the excessive mortality among colored women from rectal and anal malignancy. One step in such a study should be the determination of whether or not the relatively high deathrate of females for "chronic constipation" and the other diseases mentioned above obtains for diseases located in *different* parts of the intestinal tract. For example, do colored women suffer more than white women from rectal and anal ulcers, abscesses, and other inflammatory processes? If so, do such conditions frequently develop into malignant growths?

14. Breast cancers cause 13.8 per cent. of all deaths from cancer among white females; the rate runs higher among colored women than among white and its course has been upward for each.

15. No really adequate mortality statistics for cancer of the breast can be compiled without consideration of the distribution of the mortality according to conjugal condition. In England and Wales, it has been definitely shown that the mortality of unmarried women for breast cancers exceeds that of married women by 45 per cent. The inference drawn is that childbearing diminishes the risk from mammary cancer. If this is true, the decline in the birthrate in the United States may have been instrumental in bringing about the increased mortality from breast cancers. It is therefore urged that the Census Bureau compile the mortality from cancer of the breast according to conjugal condition, for each census year.

16. Cancer of the buccal cavity was responsible for 8.9 per cent. of all cancers among white males and 6.9 among colored males. Only 1 per cent. of deaths from cancers among females was due to buccal cavity growths. The deathrates run higher among white than among colored men, but with women the situation is reversed. The trend of the deathrate was downward between 1911 and 1922 except for colored males. Most of the deaths result from growths of the tongue and jaw.

17. Cancer of the skin was responsible for 4.1 per cent. of all cancers among white males; among colored males, for 2.1 per cent.; among white females, 1.8 per cent., and among colored females, .9 per cent. The outstanding fact in the mortality statistics of cancer of the skin is its decidedly high deathrate among white persons. The mortality among white men in this experience was 3½ times that for colored men and the deathrate among white women was almost 2½ times that for colored women. The very pronounced color difference suggests an important field for investigation. The mortality from skin cancers has shown a decided decline in recent years.

ACCIDENT MORTALITY AMONG INSURED WAGE-EARNERS IN AMERICAN STATES AND CANADIAN PROVINCES, 1923.

The year 1923 had one of the best public health records in the history of the United States and Canada. But, associated with this, there was a most disconcerting record of mortality from accidents. The deathrate for 1923 was higher than for any year since 1919, and deaths from automobile accidents were far in excess of the number reported for any prior year. It is still true that the accident death-rate in America is more than twice the rate for England and Wales.

Deaths from accidents accounted for more than 7 per cent. of all the mortality during 1923 among the fifteen million policyholders in the Industrial Department of the Metropolitan Life Insurance Company! And one accidental death in every four was due to the automobile. Facts on the fatal accident situation in the several geographic areas of the United States and Canada are of intense interest and the Company has therefore prepared a statement of its experience among its Industrial policyholders.

The highest accident deathrate for any of these geographic areas was recorded for Idaho (115.5 per 100,000). Florida was next in order, with a high rate of 110.5 per 100,000, and this rate suggests strongly the influence of the automobile as a factor in accident causation. Then, the accident rate for Oklahoma, 91.6 per 100,000 among white persons and 100.3 for colored persons, was next in order of importance. The following states or provinces also had high accident deathrates: West Virginia (82.6), Alabama (82.1), Montana (81.1), Saskatchewan (77.1) Kansas (74.9) and Pennsylvania (74.5).

The lowest rate was recorded for the Province of New Brunswick, 31.1 per 100,000. Other conspicuously good records for all fatal accidents combined were those for Ontario (40.2), District of Columbia (42.1), Quebec (44.6), Wisconsin (45.8), Manitoba (45.9), Maine (46.5), Oregon (47.5), Washington (48.8), and Missouri (49.4). Considered according to broad geographic divisions, that is, in groups of states or provinces, we find that the Eastern Canadian Provinces had the lowest fatal accident deathrate, (43.3). The New England States rank second, with an accident deathrate of 52.5 per 100,000, but this rate is 21 per cent. higher than that for the Eastern Provinces of Canada. In Maine and in Connecticut, the rates were low (46.5 and 50.1 per 100,000 respectively). Only one New England state, New Hampshire, registered a fatal accident rate in excess of that for the insured industrial population in the United States.

The Western provinces of Canada have the third best record (54.4 per 100,000). This favorable showing was due to the low rates of 45.9 and 49.7 recorded for Manitoba and British Columbia. The other three provinces registered accident deathrates in excess of this section of Canada as a whole. The West North Central states rank fourth (56.2 per 100,000), while the East North Central states rank fifth, (59.8 per 100,000). The geographic divisions with accident rates above the average for all insured wage-earners in the United States, were Pacific Coast (64.0), the Middle Atlantic States (67.0), East South Central (68.8), the West South Central states (73.7), and the Mountain States (84.3 per 100,000). This last group

of states showed the highest fatal accident rate for any of the broad geographic divisions in the United States or Canada. In the following table, we show the facts for the several geographic areas in the United States and Canada for policyholders in the Industrial Department of this Company.

Deathrates per 100,000 Persons Exposed. Accidents—All Forms. By Geographic Division, State and Province. Metropolitan Life Insurance Company, Industrial Department, 1923. (Excluding Infants under One Year of Age.)

Geographic Division	Rates per 100,000		Geographic Division	Rates per 100,000	
	White	Colored		White	Colored
Total Company	61.4	73.4	*South Atlantic* (Cont.)		
			South Carolina	69.0	90.6
United States	62.5	73.1	Georgia	64.8	60.4
			Florida	110.5	51.9
New England	52.5	46.3			
			East South Central	68.8	80.7
Maine	46.5	*			
New Hampshire	66.3	*	Kentucky	65.3	94.4
Vermont	53.2	*	Tennessee	65.4	63.9
Massachusetts	52.6	69.7	Alabama	82.1	92.2
Rhode Island	54.0	*			
Connecticut	50.1	20.5	*West South Central*	73.7	83.0
			Arkansas	58.9	81.4
Middle Atlantic	67.0	78.2	Louisiana	63.6	76.1
			Oklahoma	91.6	100.3
New York	63.5	73.5			
New Jersey	65.8	84.7	*Mountain*	84.3	*
Pennsylvania	74.5	79.3			
			Montana	81.1	*
East North Central	59.8	74.4	Idaho	115.5	*
			Colorado	73.1	*
Ohio	64.9	75.6	Utah	61.6	*
Indiana	58.8	86.7			
Illinois	56.5	65.9	*Pacific*	64.0	46.8
Michigan	66.3	112.6			
Wisconsin	45.8	39.1	Washington	48.8	32.6
			Oregon	47.5	113.8
West North Central	56.2	69.5	California	69.8	46.1
Minnesota	65.5	89.9	Canada	44.7	*
Iowa	69.1	42.6			
Missouri	49.4	77.7	*Eastern Provinces*	43.3	*
Nebraska	57.8	38.4	Nova Scotia	61.8	*
Kansas	74.9	60.1	New Brunswick	31.1	*
			Quebec	44.6	*
South Atlantic	64.0	68.9	Ontario	40.2	*
Delaware	64.1	82.0	*Western Provinces*	54.4	*
Maryland	58.3	75.8			
District of Columbia	42.1	48.6	Manitoba	45.9	*
Virginia	67.8	64.5	Saskatchewan	77.1	*
West Virginia	82.6	99.7	Alberta	58.1	*
North Carolina	65.4	69.3	British Columbia	49.7	*

*Deathrate not calculated on account of small number of colored policyholders.

INFLUENZA IN LONDON AND NEW YORK SINCE THE 1918-1919 PANDEMIC.

The influenza outbreaks prevailing since the 1918-1919 pandemic have exacted a heavier toll of mortality in London than in New York City. In the following table we show a comparison of the reported mortality from influenza in both cities, in periods beginning with the thirtieth week of one year to the twenty-ninth week of the ensuing year. This procedure covers the annual progression of influenza from July of one year to the low point in July of the following year, and facilitates comparison of the several annual "waves" of influenza incidence. The London figures are adjusted for the difference in the size of the two populations affected.

Number of Deaths from Influenza in Successive Periods, 1920 to 1924—New York City and London.

Period	Number of Deaths		Percentage Excess, London Over New York Deaths
	New York	London*	
1920–1921	398	1,018	155.8
1921–1922	867	3,546	309.8
1922–1923	1,135	916	–19.3
1923–1924†	398	2,100	427.6

* London figures adjusted to size of New York City population, *i.e.*, London x 1.299.
† To end of 17th week in 1924.

The 1920-1921 invasion produced in London more than two and one-half times the mortality experienced in New York City. In 1922-1923, the death-toll in New York was heavier than in London. The recent influenza, running from the thirtieth week of 1923 to the seventeenth week in 1924, was more than five times as destructive in London as in New York. These facts are offered in the hope that further studies will be made by interested public health workers. The data are conveniently available for London in the weekly returns of births and deaths of the Registrar-General's Office, and in the weekly reports of the New York City Department of Health. Valuable inquiries may be made into the epidemiological characters of the successive invasions and into climatological aspects of the problem. Some preliminary studies in this office suggest that important results would follow from a study of temperature, humidity, rainfall and other weather elements in relation to the size of the death-toll in the successive annual series for the two cities.

THE CENSUS BUREAU'S MORTALITY REPORT FOR 1921.

The full mortality report for the year 1921, recently published by the Bureau of the Census, is the most complete volume of mortality statistics ever published by that Bureau for any single year. Among the new features is a table showing in great detail the changes in the International List of Causes of Death made by an international conference held in Paris in 1920, and used for the first time in statistical reports relating to the year 1921. These changes were instrumental in transferring many important diseases from certain statistical headings to others. In making comparisons of mortality statistics relating to years of the present decade with those of prior decades, it is necessary to take due cognizance of these transpositions. It would be impossible to do this without the aid of such a table, and its value is inestimable. Other excellent features are: a table of "adjusted deathrates" for important diseases, for each state and each large city, and two tables which point out why accurate deathrates for certain diseases could not be obtained if the original statements of physicians as to causes of death were invariably accepted as the basis for classification. In thousands of instances it becomes necessary to write to these physicians requesting more definite information than contained in their original certifications; and this table shows the extent to which the more accurate data given in their replies influence the final figures for the deathrates from these diseases.

An especially interesting innovation is a chapter on the relation of the foreign population to the mortality rates of Boston.

Dr. William H. Davis, the Bureau's Chief Statistician for Vital Statistics, by whom or under whose direction the report was compiled, is to be congratulated on these new features and on the book as a whole.

HEALTH RECORD FOR MAY, 1924.

The unseasonable weather which prevailed during May apparently had no adverse effect upon health conditions in American and Canadian cities. This is indicated by the low deathrate for the fifteen million Industrial policyholders of the Metropolitan, which was only 9.3 per 1,000, as compared with 9.9 for May, 1923. With a single exception, May, 1921, this year's mortality is the most favorable for this month in the history of the Company.

All but one of the principal diseases, namely cerebral hemorrhage, showed declines in the rate as compared with April. The accident

rate rose very slightly, but automobile fatalities declined, and were fewer in number than during May of last year or of 1922. This we believe to be the direct result of the unseasonable weather conditions which have been responsible for curtailed automobile traffic. At any rate, the improvement should not cause undue optimism unless it continues for a longer period.

Comparisons with May of last year show lower deathrates for all of the principal diseases except scarlet fever, cerebral hemorrhage, pneumonia and other respiratory conditions, and diarrheal complaints. No importance attaches to the latter fact, as the increase is due entirely to the fact that many more infants, among whom diarrheal diseases are especially prevalent and dangerous, are now insured than at this time in 1923. The slightly higher mortality from pneumonia and other respiratory diseases probably was a reflex of an unseasonable May. The relatively high mortality among infants from bronchopneumonia was also a factor.

The deathrate for the general population of the large cities of the United States during May was lower than for April, 1924, but a little higher than for May of last year. As compared with April, more cases of smallpox, typhoid fever and malaria were reported, with more or less marked declines in the prevalence of diphtheria, influenza, measles, poliomyelitis, scarlet fever and whooping cough. There were more cases of diphtheria, scarlet fever, smallpox and typhoid than were reported in May a year ago, with less influenza, measles, poliomyelitis and whooping cough.

There was the usual decline in diphtheria in May as compared with April. At Lebanon, Pa., an outbreak occurred among members of a religious sect who refused to permit physicians to treat their sick. Seven of the congregation died and it is reported that fifty were seriously ill.

Smallpox cases increased slightly during the first three weeks of May as compared with the same weeks in April. Nevertheless, fewer cases were reported in those states where smallpox has been most prevalent recently, namely Alabama, California, Georgia, Indiana and North Carolina. The situation in Detroit has improved. Nevertheless, during the last week of May, 69 cases were reported with 21 deaths, as against 113 cases and 27 deaths for the previous week. The Detroit outbreak has been one of the most severe of recent years. From January 1st through May 31st, 1,341 cases with 109 deaths occurred. There was an excellent response on the part of the public in the matter of vaccination and the City Health Department feels that the outbreak will soon be under control.

There was an outbreak also in Columbus, Ohio, which centered around a small colored community; and in Fremont, Ohio, the prevalence of smallpox in one of the schools caused the County Health Officer to bar children from attendance. Other smallpox outbreaks were reported from Donora, Washington County, Pa.; New Westminster, B. C.; Port Colborne, Ontario, and Vancouver, B. C.

Among the public health activities of the month may be mentioned the following: Kentucky celebrated its first Health Week, May 11th–May 17th. Dr. Haven Emerson, formerly Health Commissioner of New York City, has begun a hospital and health survey of Louisville, under the auspices of the Community Chest. A State Health Exhibition was held in Enid, Okla., May 7th–10th.

Lethargic encephalitis still prevails in England and influenza mortality is running unusually high in both England and Wales.

The table on page 11 shows the mortality among Industrial policyholders for May, 1924; April, 1924; May, 1923 and for the year 1923.

METROPOLITAN LIFE INSURANCE COMPANY.

Deathrates† per 100,000 for Principal Causes, Premium-paying Business in Industrial Department. (Annual Basis.)

MONTHS OF APRIL AND MAY, 1924, AND OF MAY, 1923.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED†			
	May, 1924	Apr., 1924	May, 1923	Year 1923*
TOTAL—ALL CAUSES	931.2	1047.2	986.5	923.9
Typhoid fever	2.4	2.7	3.0	5.1
Measles	9.9	14.4	19.0	9.4
Scarlet fever	6.2	6.5	5.5	4.4
Whooping cough	7.7	11.3	8.7	7.4
Diphtheria	9.5	12.3	10.4	15.5
Influenza	18.3	28.3	26.1	30.2
Tuberculosis (all forms)	108.5	117.2	124.3	109.6
Tuberculosis of resp'y system	98.9	103.3	113.6	99.2
Cancer	64.8	71.1	70.9	71.5
Diabetes mellitus	15.9	16.4	19.2	15.9
Cerebral hemorrhage	64.4	58.8	62.5	61.0
Organic diseases of heart	126.4	143.5	136.2	126.7
Pneumonia (all forms)	101.0	144.4	94.6	83.5
Other respiratory diseases	16.6	18.6	16.2	13.9
Diarrhea and enteritis	20.2	20.3	14.6	28.1
Bright's disease (chronic nephritis)	66.6	73.7	73.6	68.5
Puerperal state	17.1	19.3	19.6	17.6
Suicides	8.0	7.9	9.2	7.3
Homicides	5.2	7.3	5.4	7.2
Other external causes (excluding suicides and homicides)	52.8	51.3	59.4	62.7
Traumatism by automobile	11.2	12.6	13.4	15.2
All other causes	209.8	221.7	208.0	178.6

* Based on provisional estimate of lives exposed to risk in 1923.
† All figures include infants insured under one year of age.

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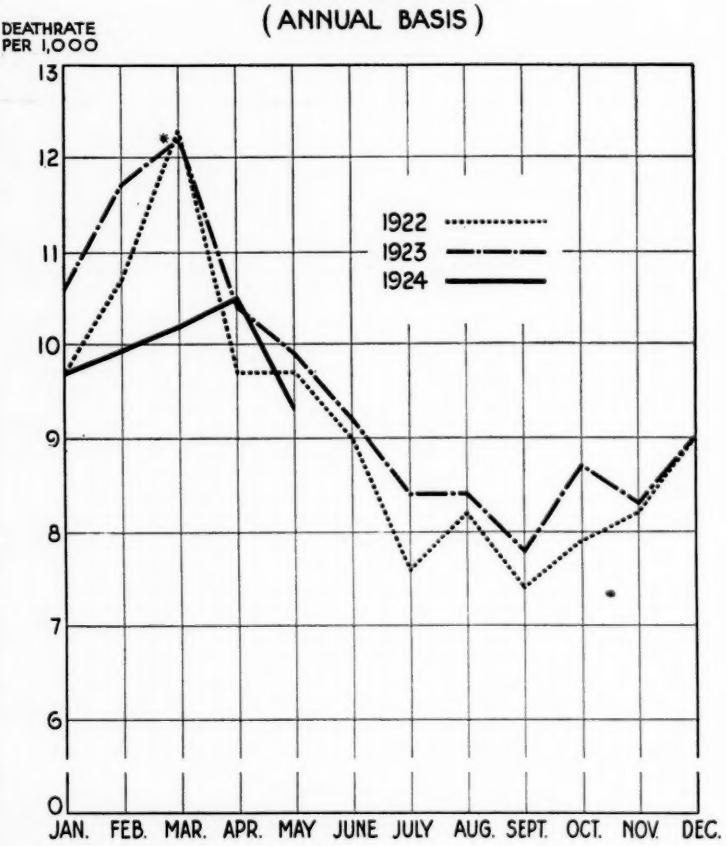
DEATHRATE PER 1,000 *in* SPECIFIED MONTHS *of* 1922, 1923, 1924

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	1922	1923	1924		1922	1923	1924
JAN.	9.7	10.6	9.7	JULY	7.6	8.4	
FEB.	10.7	11.7	9.9	AUG.	8.2	8.4	
MAR.	12.3	12.2	10.2	SEPT.	7.4	7.8	
APR.	9.7	10.4	10.5	OCT.	7.9	8.7	
MAY	9.7	9.9	9.3	NOV.	8.2	8.3	
JUNE	9.0	9.2		DEC.	9.0	9.0	

* Beginning with March, 1923, figures include mortality of infants under one year of age.

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